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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,555	08/21/2003	Yoon-Deock Lee	678-1219 (P11023)	9440

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EXAMINER
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KIM, CHONG R

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/646,555	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Charles Kim	<b>Art Unit</b> 2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 8 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                   |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/15/04</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-7, 9-15, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazuhiko et al., J.P. Patent No. 10-122871 (“Kazuhiko”) [Note the Examiner has relied on the English machine translation provided by the Japanese Patent Office website to cite the relevant portions of the Kazuhiko reference. A copy of that translation has been attached to this Office Action].

Referring to claim 1, Kazuhiko discloses state sensing apparatus for a movable body (automobile), the state sensing apparatus comprising:

- a. an image information collecting unit (CCD camera 2) for collecting image information regarding a dashboard (5) of a movable body (paragraph 14 and figure 1. Figure 1 illustrates a CCD camera 2 that collects image information regarding a dash 5 of an automobile); and
- b. an image recognition unit (7) for analyzing the image information collected by the image information collecting unit and for sensing a state of the movable body [paragraphs 15, 20-21 and figure 1. The location detecting element 7 is interpreted as being analogous to an

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image recognition unit because it analyzes the image information collected by the CCD camera and senses the state (rate) of the automobile].

Referring to claim 2, Kazuhiko further discloses that the image information collecting unit (CCD camera 2) is installed at a position a predetermined distance away from a front surface of the dashboard of the movable body (paragraph 14 and figure 1. Note that the CCD camera 2 in figure 1 is mounted on the steering wheel holder 3, which is located a predetermined distance away from the front of the dashboard 5).

Referring to claim 3, Kazuhiko further discloses that the image information collecting unit (CCD camera 2) is a miniature camera (paragraphs 14-15 and figure 1. In the description, Kazuhiko does not explicitly describe the CCD camera 2 as a *miniature* camera. However, Examiner notes that Kazuhiko's illustration of CCD camera 2 in figure 1 is relatively proportionate in size to the miniature camera illustrated in figures 1A and 1B in Applicants' drawings. In addition, Applicants have failed to provide a specific description of the claimed miniature camera in their specification. In particular, Applicants have not defined what a miniature camera is, nor have they described the dimensions of a miniature camera. Accordingly, the Examiner is left to the drawings (figures 1A and 1B) to determine what the claimed miniature camera means in light of Applicants' specification. Therefore, in view of the similarities in size of Kazuhiko's CCD camera in figure 1 and Applicants' camera in figures 1A and 1B, coupled with the lack of a specific description in Applicants' specification, the Examiner has construed Kazuhiko's CCD camera 2 as being analogous to Applicants' claimed miniature camera).

Referring to claim 4, Kazuhiko further discloses that the image recognition unit analyzes the collected image information by means of image recognition [paragraphs 20-21. Kazuhiko explains that the image obtained by CCD camera 2 is supplied to the location detection element 7 for image recognition. In particular, location detection element 7 performs image recognition by analyzing the needle angle of the dashboard image obtained by the CCD camera 2].

Referring to claim 5, Kazuhiko further discloses that the image recognition (7) unit utilizes a feature-based image recognition in order to analyze image information regarding an analog dashboard [paragraphs 20-21. As noted above in claim 4, the location detection element 7 performs image recognition by analyzing the needle angle of the dashboard image. Here, the analysis of the needle angle is construed as the claimed feature-based image recognition].

Referring to claim 6, Kazuhiko further discloses that the image recognition unit (7) senses a speed of the movable body by analyzing information regarding a rotation angle by which a needle of an analog dashboard is rotated from a position representing a speed of zero [paragraphs 20-21 and figure 7A. Kazuhiko explains that the speed-conversion section 23 determines the speed of the automobile based on the rotation angle of the needle determined by the needle angle-detecting element 22. As illustrated in figure 7A, the rotation angle represents the angle by which a needle of an analog dashboard is rotated from a position representing a speed of zero].

Referring to claim 7, Kazuhiko further discloses that the image recognition unit (7) stores speed information in accordance with the rotation angle of the dashboard needle and senses the speed of the movable body based on the stored information and the information regarding the rotation angle [paragraph 97. Kazuhiko explains that speed (rate) information and its

corresponding needle rotation angle are stored as a table in RAM memory and subsequently accessed to determine the speed of the automobile].

Referring to claim 9, Kazuhiko further discloses that the image recognition unit (7) utilizes an appearance-based image recognition in order to analyze image information regarding a digital dashboard [paragraph 98. Kazuhiko explains that in addition to utilizing the system to detect the rotation angle of a needle in an analog dashboard, the system can also be used for dashboards that have figures expressing the speed, wherein the figures are made up of “seven segments.” Examiner notes that these figures made up of seven segments are clearly indicative of digital digits and therefore interpreted as digital numbers on a digital dashboard. Kazuhiko further explains that the speed of the vehicle is determined by performing character/figure recognition for the image of the dashboard, which is construed as an appearance-based image recognition].

Referring to claim 10, Kazuhiko discloses a state sensing method for a movable body, the state sensing method comprising the steps of:

- a. collecting image information regarding a dashboard of a movable body (paragraph 14 and figure 1. Figure 1 illustrates a CCD camera 2 that collects image information regarding a dash 5 of an automobile); and
- b. analyzing the collected image information and sensing a state of the movable body [paragraphs 15, 20-21 and figure 1. The location detecting element 7 analyzes the image information collected by the CCD camera and senses the state (rate) of the automobile].

Referring to claim 11, Kazuhiko further discloses that in the collecting step, the image information regarding the dashboard of the movable body is collected from a miniature camera

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installed at a position a predetermined distance away from a front surface of the dashboard of the movable body (paragraphs 14-15 and figure 1. Note that the CCD camera 2 in figure 1 is mounted on the steering wheel holder 3, which is located a predetermined distance away from the front of the dashboard 5. In the description, Kazuhiko does not explicitly describe CCD camera 2 as a *miniature* camera. However, Examiner notes that Kazuhiko's illustration of CCD camera 2 in figure 1 is relatively proportionate in size to the miniature camera illustrated in figures 1A and 1B in Applicants' drawings. In addition, Applicants have failed to provide a specific description of the claimed miniature camera in their specification. In particular, Applicants have not defined what a miniature camera is, nor have they described the dimensions of a miniature camera. Accordingly, the Examiner is left to the drawings (figures 1A and 1B) to determine what the claimed miniature camera means in light of Applicants' specification. Therefore, in view of the similarities in size of Kazuhiko's CCD camera in figure 1 and Applicants' camera in figures 1A and 1B, coupled with the lack of a specific description in Applicants' specification, the Examiner has construed Kazuhiko's CCD camera 2 as being analogous to Applicants' claimed miniature camera).

Referring to claim 12, Kazuhiko further discloses that in the analyzing step, the collected image information is analyzed using image recognition [paragraphs 20-21. Kazuhiko explains that the image obtained by CCD camera 2 is supplied to the location detection element 7 for image recognition. In particular, location detection element 7 performs image recognition by analyzing the needle angle of the dashboard image obtained by the CCD camera 2].

Referring to claim 13, Kazuhiko further discloses that in the analyzing step, a feature-based image recognition is utilized for analyzing image information regarding an analog

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dashboard [paragraphs 20-21 and figure 1. As noted above in claim 12, the location detection element 7 performs image recognition by analyzing the needle angle of the dashboard image. Here, the analysis of the needle angle is construed as the claimed feature-based image recognition].

Referring to claim 14, Kazuhiko further discloses that the dashboard is an analog dashboard (figure 1), and wherein, in the analyzing step, a speed of the movable body is sensed by analyzing information for a rotation angle by which a needle of the analog dashboard has rotated from a position representing a speed of zero [paragraphs 20-21 and figure 7A. Kazuhiko explains that the speed-conversion section 23 determines the speed of the automobile based on the rotation angle of the needle determined by the needle angle-detecting element 22. As illustrated in figure 7A, the rotation angle represents the angle by which a needle of an analog dashboard is rotated from a position representing a speed of zero].

Referring to claim 15, Kazuhiko further discloses that in the analyzing step, speed information in accordance with the rotation angle of the dashboard needle is stored in advance and the speed of the movable body is sensed based on the stored information and the information for the rotation angle [paragraph 97. Kazuhiko explains that speed (rate) information and its corresponding needle rotation angle are stored as a table in RAM memory and subsequently accessed to determine the speed of the automobile].

Referring to claim 17, Kazuhiko further discloses that in the analyzing step, an appearance-based image recognition is utilized for analyzing image information regarding a digital dashboard [paragraph 98. Kazuhiko explains that in addition to utilizing the system to detect the rotation angle of a needle in an analog dashboard, the system can also be used for



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dashboards that have figures expressing the speed, wherein the figures are made up of “seven segments.” Examiner notes that these figures made up of seven segments are clearly indicative of digital digits and therefore interpreted as digital numbers on a digital dashboard. Kazuhiko further explains that the speed of the vehicle is determined by performing character/figure recognition for the image of the dashboard, which is construed as an appearance-based image recognition].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al., J.P. Patent No. 10-122871 (“Kazuhiko”) [Note the Examiner has relied on the English machine translation provided by the Japanese Patent Office website to cite the relevant portions of the Kazuhiko reference. A copy of that translation has been attached to this Office Action].

Referring to claim 3, Kazuhiko does not explicitly disclose that the CCD camera 2 is a miniature camera, as noted in the 102(b) rejection of claim 3 above. Although the Examiner has taken the position that the CCD camera 2 of Kazuhiko is analogous to the miniature camera claimed by Applicants, the Examiner realizes the possibility that one can construe the CCD camera 2 in Kazuhiko as not being a miniature camera. In that case, Official Notice is taken that

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miniature cameras were exceedingly well known in the art. In Kazuhiko (figure 1), the CCD camera 2 is mounted on the steering wheel holder 3 inside an automobile. Therefore, it would have been obvious to implement a miniature camera in Kazuhiko, in order to prevent the camera from blocking the driver's light of sight to the dashboard and also to prevent the camera from getting in the way of the steering wheel.

Referring to claim 11, Kazuhiko further discloses that in the collecting step, the image information regarding the dashboard of the movable body is collected from a camera installed at a position a predetermined distance away from a front surface of the dashboard of the movable body (paragraphs 14-15 and figure 1. Note that the CCD camera 2 in figure 1 is mounted on the steering wheel holder 3, which is located a predetermined distance away from the front of the dashboard 5).

Kazuhiko does not explicitly disclose that the CCD camera 2 is a miniature camera. However, it would have been obvious to implement a miniature camera in Kazuhiko for the reasons explained in the 103(a) rejection of claim 3 above.

***Allowable Subject Matter***

3. Claims 8 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ck

March 27, 2007